Natural Heritage & Endangered Species Program
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Glyptemys insculpta

State Status: **Species of Special Concern**
Federal Status: None

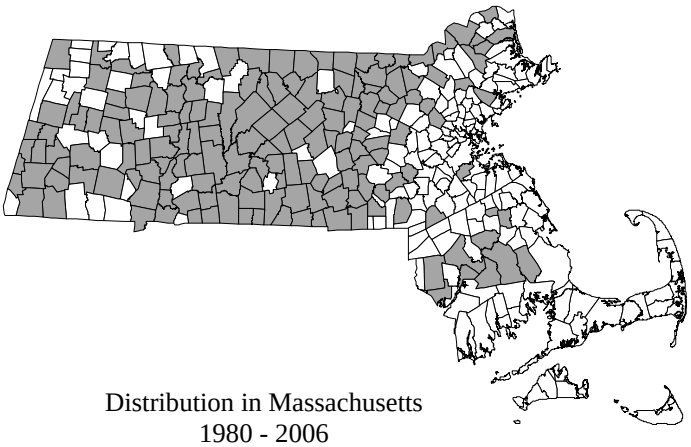
Photo by Mike Jones

DESCRIPTION: The Wood Turtle is a medium-sized turtle that can be recognized by its sculpted shell and orange coloration on the legs and neck. The carapace (upper shell) is rough and each scale (scute) rises upwards in an irregular pyramid of grooves and ridges. The carapace is tan, grayish-brown or brown with a pattern of black or yellow lines on the larger scutes and has a central ridge. The plastron (lower shell) is yellow with oblong dark patches on the outer, posterior corner of each scute. The head is black, but may be speckled with faint yellow dots. The legs and neck can have orange to reddish coloration. Hatchlings have a dull-colored shell that is broad and low, a tail that is almost as long as their carapace and they lack orange coloration on the neck and legs. The best distinguishing characteristics of a male is their concave plastron, thick tail, long front claws, and a wider and more robust head than females.

SIMILAR SPECIES: The habitat of the Eastern Box Turtle (*Terrapene carolina*) and the Blanding's Turtle (*Emydoidea blandingii*) may overlap that of the Wood Turtle, but neither has the Wood Turtle's pyramidal shell segments. Unlike the Wood Turtle, the Box and Blanding's Turtle have hinged plastrons into which they can withdraw or partially withdraw if threatened. The Northern Diamond-backed Terrapin (*Malaclemys terrapin*) has a shell similar to that of the Wood Turtle. However, its skin is grey and it lives only near brackish water, which the Wood Turtle avoids.

RANGE: The Wood Turtle can be found throughout New England, north to Nova Scotia, west to eastern Minnesota, and south to northern Virginia. The Wood Turtle appears to be widespread in Massachusetts. However, it should be kept in mind that little is known about the status of local populations associated with the majority of these sightings. Most of the towns have fewer than 5 known occurrences.

HABITAT IN MASSACHUSETTS: The preferred habitat of the Wood Turtle is riparian areas. Slower moving mid-sized streams are favored, with sandy bottoms and heavily vegetated stream banks. The stream bottom and muddy banks provide hibernating sites for overwintering, and open areas with sand or gravel substrate near the streams edge are used for nesting. Wood Turtles spend most of the spring and summer in mixed, deciduous forests, riparian wetlands including wet meadows, bogs, and beaver ponds, and hay fields. Then they return to the streams in late summer or early fall to and overwinter.



Distribution in Massachusetts
1980 - 2006
Based on records in Natural Heritage Database

Wood Turtle

LIFE CYCLE & BEHAVIOR: The Wood Turtle leads a rather solitary life and they are usually observed alone. It typically spends the winter in flowing rivers and perennial streams. Full-time submersion in the water begins in November, once freezing occurs regularly overnight, and continues until temperatures begin to increase in spring. With head and limbs tucked in under the carapace and tail extended, it lies next to submerged and anchored stumps and logs on the sides of the stream away from the main current. It also may hibernate in large groups in community burrows in muddy banks, stream bottoms, deep pools, decaying forest vegetation, and abandoned muskrat burrows.

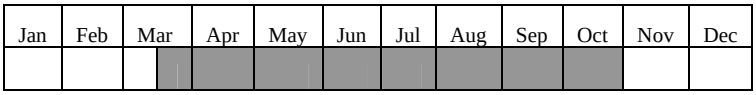
The Wood Turtle may make underwater movements in the stream during the winter; however, extended periods of activity and emergence from the water do not occur until mid-March to early April. Wood Turtles are active during the day and are usually encountered within a few hundred meters from the stream banks. They have relatively linear home ranges that can be ½ a mile in length in Massachusetts (M. Jones, unpubl data). They will use emergent logs or grassy, sandy and muddy banks to soak up the spring sun. Wood Turtles are opportunistic omnivores; their diet consists of both plant and animal matter that is consumed on land and in the water. The Wood Turtle occationaly exhibits an unusual feeding behavior referred to as "stomping." In its search for food, this species will stomp on the ground alternating its front feet, creating vibrations in the ground resembling rainfall. Earthworms, responding, rise to the ground's surface to keep from drowning. Instead of rain, the earthworm is met by the Wood Turtle, and is promptly devoured.

Although the peaks in mating activity occur in the spring and fall, Wood Turtles are known to mate throughout their activity period. Males have been observed exhibiting aggressive behavior such as chasing, biting, and butting both during the mating season and at other times. A courtship ritual "dance" typically takes place at the edge of a stream or brook for several hours prior to mating. The dance involves the male and female approaching each other slowly with necks extended and their heads up. Before they actually touch noses, they lower their heads and swing them from side to side. Copulation usually takes place within the water. Courting adults may produce a very subdued whistle that is rarely heard by observers. Mating may occur multiple times over the course of the active season with different individuals.

Female Wood Turtles lay one clutch a year and females will often congregate in a good nesting area. Clutch size in Massachusetts averages 7 eggs (Jones, 2004, pers. comm.). Nesting sites may be a limited resource for Wood Turtles. In Massachusetts, nesting occurs over a four-week period, primarily in June. Females are known to travel long distances in search of appropriate nesting habitat. Once they have arrived at a suitable nesting area, there may be multiple nesting attempts or false nests that occur over the course of several days, prior to laying eggs.

Hatchling emergence occurs from August through September. The life span of the adult Wood Turtle is easily 46 years and may reach as much as 100 years.

ACTIVE PERIOD



THREATS: Population decline of this species has been caused by development of wooded stream banks, roadway casualties, hay-mowing operations, pollution of streams, unnatural increase in populations of predators (such as raccoons and skunks) due to human presence, and commercial and incidental collection of specimens for pets. Hatchling and juvenile survival is very low and the time to sexual maturity is long. These characteristics are compensated by adults being long-lived and reproducing many times. Therefore adult survivorship needs to be very high to sustain a population. Unfortunately, these characteristics also make wood turtles vulnerable to these human disturbances.

MANAGEMENT RECOMMENDATIONS: A habitat model developed by UMASS will be used in conjunction with NHESP records to evaluate and rank Wood Turtle habitat. This information will be used to direct land acquisition and to target areas for Conservation Restrictions (CR's), Agricultural Preservation Restrictions (APR's) and Landowner Incentive Program (LIP) projects.

Alternative wildlife corridor structures should be considered at strategic sites on existing roads. In particular, appropriate wildlife corridor structures should be considered for bridge and culvert upgrade and road-widening projects within or near Wood Turtle habitat.

Efforts will be made by the Natural Heritage and Endangered Species Program to inform local regulatory agencies of the new wildlife corridor section in the Mass Highway design guidance document, and to provide them

with key locations where these measures would be most effective for Wood Turtle conservation.

Habitat management and restoration practices are currently being developed and implemented in order to create and/or maintain consistent access to nesting habitat within core habitat areas. This is most practical on state-owned conservation lands. However, educational materials will be made available to guide private land-owners on the best management practices for Wood Turtle habitat.

There are two potential ways to decrease turtle injuries resulting from mowing; during the growing season blade height should be raised above 6 inches (15 cm). The other potential way (which will also work for plowing) to avoid turtle mortality is to restrict mowing to early November through mid-March, when the turtles are overwintering. These measures are recommended as standard practice on right-of-ways, roadsides, and other state properties on and near Wood Turtle habitat.

Forestry restrictions apply to Priority Habitat delineated for Wood Turtles in order to avoid direct turtle mortality. Motorized vehicle access to harvesting sites in Wood Turtle habitat is restricted to the period when turtles are inactive during the winter. Seasonal forestry restrictions apply to Wood Turtle habitat and to upland habitat that occurs up to 600 feet (183 m) beyond the stream edge. In order to maintain the structural integrity of overwintering sites, bridges should be laid down across streams prior to any motorized equipment crossing the stream.

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